



Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

East Fork of Tebo Creek

Water Body Segment at a Glance:

County: Henry
Nearby Cities: Windsor
Length of impairment: 1 mile
Pollutants: pH
Source: Abandoned mine lands



State map showing location of watershed

TMDL Priority Ranking: EPA established TMDL 2006

Beneficial uses of East Fork Tebo Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Human Health Protection (Fish Consumption)

Use That is Impaired

- Protection of Warm Water Aquatic Life

Standards that apply

- The impairment of this waterbody is based on exceedence of the specific criteria contained in Missouri's Water Quality Standards, 10 CSR 20-7.031. The specific criteria state:
 - pH. Water contaminants shall not cause pH to be outside of the range of 6.5-9.0.
10 CSR 20-7.031(4)(E).

Description of the Problem

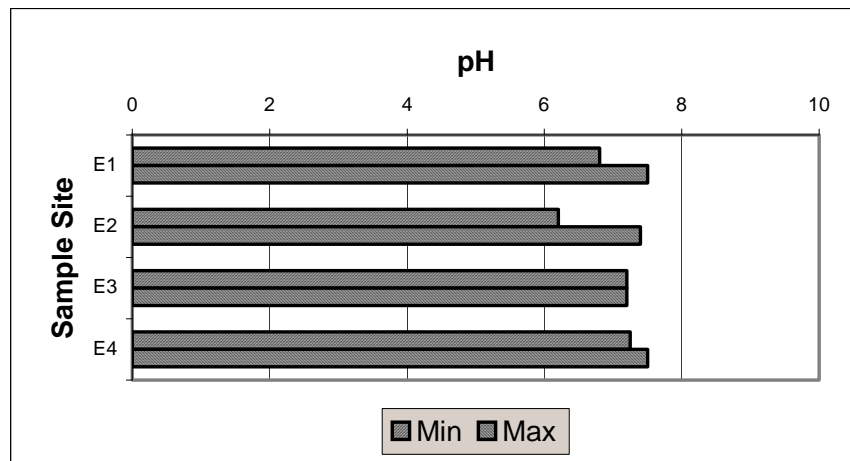
The Tebo Creek area has been an important coal-producing site since the 1800s. By 1895, there were numerous underground mines along the MKT railroad near Lewis, Calhoun and Windsor. Between 1942 and the early 1950s, over 1,200 acres in this area were strip-mined. Large amounts of coal wastes were deposited in pits in and along the upper portions of Middle Fork Tebo Creek near the Johnson-Henry County line. A smaller coal waste site was located on East Fork Tebo Creek about 1.5 miles northwest of downtown Windsor. When sulfide minerals in rock are exposed to water and oxygen, they oxidize and form highly acidic (low pH) iron-rich and sulfate-rich drainage, which is harmful to aquatic life. These minerals make up a large amount of the coal wastes in the Tebo Creek area. Acid mine drainage affected both Middle and East Fork Tebo

Creeks, and was particularly severe in Middle Fork Tebo Creek due to the large volumes of coal wastes that were continually eroding into the stream and the seepage of acid water from the surface coal waste deposits along the edges of the stream.

The Missouri Department of Natural Resources reclaimed these coal waste areas in the early 1990s. A total of 486 acres were re-graded, covered with soil and revegetated. On the Middle Fork Tebo site, a wetland was constructed for treatment of acid water and seven grade stabilization structures were placed in the creek to stabilize the stream channel. Cost for the Middle and East Fork Tebo projects was \$4.6 million. The table of recent water quality data shows that the reclamation projects have been successful in greatly reducing acid water discharge to East and Middle Tebo Creeks. In East Fork Tebo Creek there is approximately one mile of slightly acid water. The U.S. Environmental Protection Agency approved Total Maximum Daily Loads (TMDLs) for West Fork, Middle Fork and Tributary to Middle Fork of Tebo Creek on February 12, 2004. This document may be accessed at <http://www.dnr.mo.gov/env/wpp/tmdl/tebo-ck-final-tmdl.pdf>. A map of the area and graphs summarizing the existing data for East Fork Tebo Creek are found below.

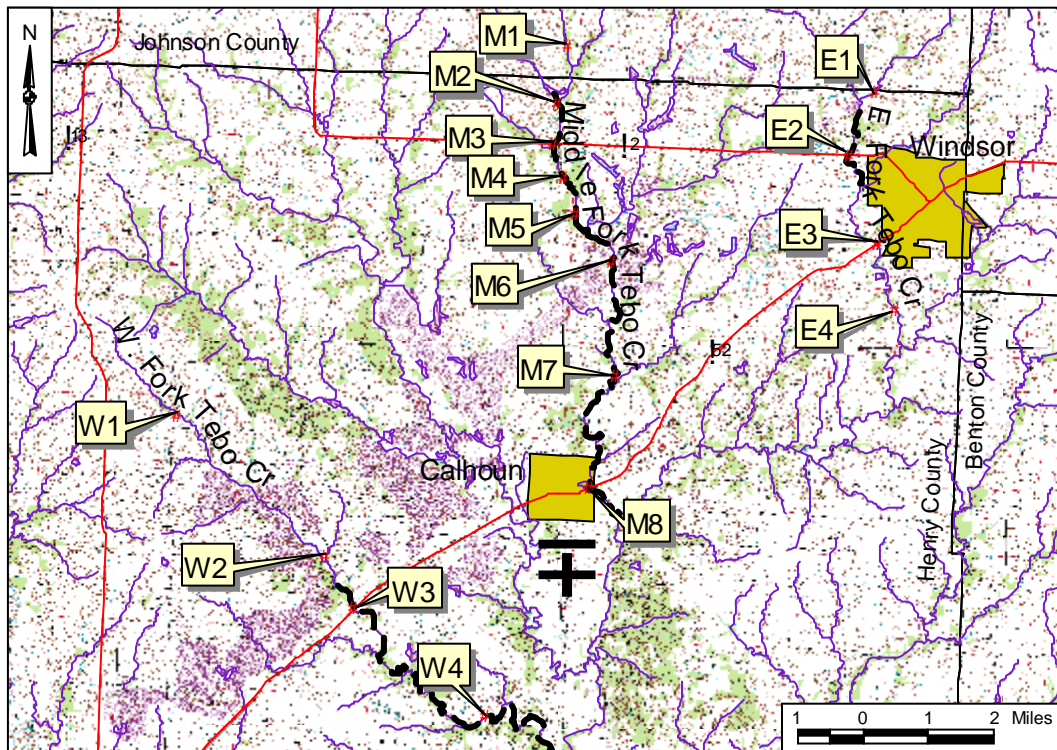
Even though East Fork Tebo Creek is now meeting water quality standards, the US Environmental Protection Agency (EPA) established a TMDL for it on July 24, 2006. This was so that EPA and Missouri could meet the requirements of a lawsuit that specifies a certain number of TMDLs to be completed each calendar year.

Range of pH values on the East Fork of Tebo Creek, 1987-2000



Sources: Missouri Department of Natural Resources and U.S. Geological Survey.

**Map of Impaired Portion of East, Middle and West Forks of Tebo Creek
Showing Location of Sampling Sites**



--- Impaired segments → Direction of Flow

Sample Site Index

E1 – East Fork Tebo Creek 0.5 mile above Triple AML
 E2 – East Fork Tebo Creek 0.5 mile below Triple AML
 E3 – East Fork Tebo Creek 2 miles below Triple AML
 E4 – East Fork Tebo Creek 3 miles below Triple AML

Note: For data on the other forks of Tebo Creek, see the Tebo Creeks Information Sheet

For more information call or write:

Missouri Department of Natural Resources

Water Protection Program

P.O. Box 176

Jefferson City, MO 65102-0176

1-800-361-4827 or 573-751-1300 office

573-522-9920 fax

Program Home Page: www.dnr.mo.gov/env/wpp/index.html